Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

STATEMENT OF BASIS

Chloroprene Unit
DuPont Performance Elastomers L.L.C. – Pontchartrain Site
LaPlace, St. John the Baptist Parish, Louisiana
Agency Interest Number: 38806
Activity Number: PER20060006
Draft Permit 3000-V2

I. APPLICANT

Company:
DuPont Performance Elastomers L.L.C. – Pontchartrain Site
560 Highway 44
LaPlace, LA 70068

Facility:
Chloroprene Unit
560 Highway 44
LaPlace, St. John the Baptist Parish, Louisiana 70068
Approximate UTM coordinates are 738.75 kilometers East and 3327.25 kilometers North, Zone 15

II. FACILITY AND CURRENT PERMIT STATUS

DuPont Performance Elastomers L.L.C. (DPE) owns and operates a chemical manufacturing facility near LaPlace, Louisiana. The facility is located on a portion of the Pontchartrain Site of E.I. DuPont de Nemours and Company (DuPont) on land that is leased to DPE by DuPont.

The DPE facility consists of three (3) operating units: the Neoprene Unit, the Chloroprene Unit, and the HCl Recovery Unit. The Neoprene Unit is authorized to operate under Air Permit No. 2249-V3 issued on September 11, 2006; the Chloroprene Unit is authorized to operate under Air Permit No. 3000-V1 issued on December 19, 2003; the HCl Recovery Unit is authorized to operate under Air Permit No. 206-V0 issued on January 12, 2005.

DuPont Performance Elastomers L.L.C. - Pontchartrain Site is a designated Part 70 source. Several Part 70 permits have been issued to the operating units within the complex. These include:

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Permit No.	Unit or Source	Date Issued
206-V0	HCl Recovery Unit	1/12/2005
2249-V3	Neoprene Unit	9/11/2006
3000-V1	Chloroprene Unit	12/19/2003

This is the Part 70 operating permit renewal and minor modification for the Chloroprene Unit.

III. PROPOSED PERMIT / PROJECT INFORMATION:

Application

A permit application was submitted on November 6, 2006 requesting a Part 70 operating permit renewal and minor modification for the DPE's Chloroprene Unit. Additional information dated January 4th, January 24th, and March 9, 2007 was also received.

Proposed Permit

In this Part 70 operating permit renewal and minor modification, DPE requested the following:

1. To renew its Part 70 air operating permit for the Chloroprene Unit.

2. To remove several ACR production emission sources (see table below) currently permitted (but never built/installed) in the Chloroprene Unit and locate/permit them in the Neoprene Unit or remove them entirely from the permit. Permit No. 3000-V1 issued on 12/19/2003 authorized DPE to add production equipment in the Chloroprene Unit to produce ACR. Since then, changes have been made to the original plan and several ACR production emission sources previously permitted at the Chloroprene Unit will be removed entirely or located in and permitted in the Neoprene Unit. In addition, new equipment will be added (see table below) to the Chloroprene Unit to produce ACR. DPE will submit a permit application to address changes to the Neoprene Unit.

3. To remove Part 70 Specific Condition No. 4 from the current Part 70 permit (Permit No. 3000-V1) since this specific condition concerns equipment used it the manufacture of ACR which will be relocated to and permitted in the Neoprene Unit.

4. To remove all regulations regarding and references to 40 CFR 63 Subpart U (National Emission Standards for Hazardous Air Pollutant (NESHAP) Emissions: Group 1 Polymers and Resins) for Source ID No. 1110-22 (ACR Process –Fugitive Emissions) in the ACR manufacturing section of the Chloroprene Unit which was incorrectly regulated by this Subpart in Permit No. 3000-V1. By letter from the United States Environmental Protection Agency (EPA) Region 6 dated March 3, 2004, the EPA determined that the ACR manufacturing unit located within the Chloroprene Unit shall be regulated according to 40 CFR 63 Subpart FFFF (NESHAP: Miscellaneous Organic Chemical Manufacturing (MON)) and not by 40 CFR 63 Subpart U; Source ID No. 1110-22 shall therefore be regulated by 40 CFR 63 Subpart FFFF (MON) at the issuance of this permit.

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The table below summarizes the proposed changes requested by DuPont Performance Elastomers L.L.C. in this Part 70 air permit renewal and minor modification:

Source ID No.	Source Description	Proposed Changes
1110-12	Meso Feed Tank	Delete source.
1110-13	Reactor Vent Condenser	Delete source. This source will now vent through Source ID No. 1110-26.
1110-14	Heels Decanter	Delete source. This source will now vent through Source ID No. 1110-26.
1110-15	Crude ACR Decanter	Delete source. This source will now vent through Source ID No. 1110-26.
1110-16	ACR Wastewater Pump Tank	Delete source.
1110-17	Isom Seal Flush Tank	Delete source.
1110-18	Crude ACR Tank	Delete source.
1110-19	ACR Column Vent Condenser	Delete source. This source will be moved to the Neoprene Unit.
1110-20	ACR Lotting Tanks Vent	Delete source.
1110-20A	ACR Lotting Tank No. 1	Delete source.
1110-20B	ACR Lotting Tank No. 2	Delete source.
1110-21	Inhibitor Make-up Manhole	Delete source.
1110-22	ACR Process – Fugitive Emissions	Reduction of emissions.
1110-23	DIBN IBC	Delete source.
1110-24	Chlorinator Reactor	Delete source. This source will now vent through Source ID No. 1110-26.
1110-25	NMP/PTZ Tanks	Add – new source.
1110-26	ACR Process Vent	Add – new source.
1117-4	ACR Storage Tank	Delete source. This source will be moved to the Neoprene Unit.
1117-5	ACR Solvent Blend Tank	Delete source. This source will be moved to the Neoprene Unit.
1117-6	ACR Solvent Blend Drumming	Delete source. This source will be moved to the Neoprene Unit.
1192-1 & 2	Chlorine Neutralization Tanks	Delete organic emissions.

A notice requesting public comment on the proposed permit will be published in *The Advocate*, Baton Rouge, Louisiana, and in the *L'Observateur*, LaPlace, Louisiana. The proposed permit will also be sent to the US EPA Region VI.

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Process Description

Chloroprene Manufacture

The DPE Chloroprene Unit is a Synthetic Organic Chemical Manufacturing Industry (SOCMI) facility. Chloroprene is produced primarily as a raw material for the Neoprene Manufacturing Process. Chloroprene is manufactured by using four major steps:

1. DCB Synthesis – In the first step, Dichlorobutene (DCB) is manufactured in a liquid phase by ionic chlorination of butadiene in an evaporative cooled isothermal reactor. Crude DCB is a mixture of two isomers: 1,4 and 3,4-DCB.
2. DCB Refining – In the second step, the Crude DCB product is refined in a series of distillation columns. In the refining process, two DCB isomers (1,4-DCB and 3,4-DCB) are separated.
3. DCB Isomerization – In this step, the 1,4-DCB is isomerized to 3,4-DCB which is the desired raw material for the next and final monomer step.
4. CD Synthesis – In the last step, the refined 3,4-DCB is reacted with caustic, water, and a catalyst. The mixture is fed to a reactor to produce chloroprene.

Following a series of strippers and decanters, refined chloroprene is stored for final distribution.

ACR Manufacture

Additional equipment will added to the Chloroprene Unit to produce ACR (2,3-dichloro-1,3-butadiene). ACR will be used in the manufacture of certain types of neoprene products and blends. The starting raw material for ACR production will be trans-1,4-dichloro-2-butene (t-1,4-DCB) as produced in the existing DCB synthesis step.

Permitted Air Emissions

Estimated changes in permitted emissions from the Chloroprene Unit in tons per year are as follows:

Pollutant	Permitted Before	Permitted After	Permitted Change
PM_{10}	0.21	0.25	+ 0.04
SO_2	0.01	0.01	-
NO_X	2.97	2.97	-
CO	1.75	1.75	-
VOC*	102.02	103.30	+ 1.28

*VOC TAP Speciation (TPY) LAC 33:III.Chapter 51 Regulated VOC TAPs			
Pollutant	**Before**	**After**	**Change**
Benzene	< 0.01	< 0.01	-
1,3-Butadiene[1]	9.96	9.96	-
n-Butanol	0.08	-	- 0.08
Chloroprene	30.24	30.24	-
Cumene	0.0004	0.0004	-
Formaldehyde	0.01	0.01	-
Gylcol Ethers (Table 51.3)	0.02	0.02	-
Toluene[1]	2.12	2.12	-
Triethylamine	0.13	0.13	-
Xylene[1]	0.08	-	- 0.08
Total VOC TAPs	**42.64**	**42.48**	**- 0.16**
Other VOC	59.38	60.82	+ 1.44

[1] Highly Reactive Volatile Organic Compound (HRVOC)

Non-VOC TAP Speciation (TPY) LAC 33:III.Chapter 51 Regulated Non-VOC TAPS			
Pollutant	**Before**	**After**	**Change**
Chlorine	0.18	0.18	-
Dichloromethane	0.07	-	- 0.07
Hydrochloric Acid	3.98	3.98	-
Tetrachloroethylene	0.08	-	- 0.08
Total Non-VOC TAPs	**4.31**	**4.16**	**- 0.15**

Regulatory Applicability

This permit was reviewed for compliance with the Louisiana Part 70 operating permit program, the Louisiana Air Quality Regulations, New Source Performance Standards (NSPS), and National Emission Standards for Hazardous Air Pollutants (NESHAP). Prevention of Significant Deterioration (PSD) and Non-Attainment New Source Review (NNSR) regulations do not apply.

MACT Requirements

The DPE site is a major source of toxic air pollutants (TAPs) pursuant to LAC 33:III.Chapter 51. The Chloroprene Unit emits chloroprene and 1,3-butadiene (Class II TAPs) and toluene and hydrochloric acid (Class III TAPs) at rates above their respective minimum emission rate (MER) established in LAC 33:III.5112. Sources emitting chloroprene and 1,3-butadiene require maximum achievable control technology (MACT); MACT is not required for Class III or Supplemental TAPs, but DPE must comply with all applicable provisions of the Louisiana Air Toxics Program, LAC 33:III.Chapter 51. The impact of all TAP emissions must be below their respective Ambient Air Standards.

Air Modeling Analysis

Pollutant	Time Period	Calculated Maximum Ground Level Concentration	Louisiana Air Quality Standard (NAAQS)
N/A			

Impact on air quality from emissions from the Chloroprene Unit is below the National Ambient Air Quality Standards (NAAQS) and the Louisiana Ambient Air Standards (AAS) beyond industrial property.

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to Section VIII of the draft Part 70 permit.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to Section IX of the draft Part 70 permit.

IV. PERMIT SHIELD

Not applicable.

V. PERIODIC MONITORING

Periodic monitoring is required for certain sources in this permit. All periodic monitoring shall be conducted in accordance with state and federal regulations, as applicable. See the Facility Specific Requirements of the draft Part 70 permit for monitoring requirements.

VI. APPLICABILITY AND EXEMPTIONS OF SELECTED SUBJECT ITEMS

ID No:	Description	Requirement	Notes
-	Chloroprene Unit	40 CFR 64 Compliance Assurance Monitoring (CAM)	**EXEMPT.** The Chloroprene unit is subject to 40 CFR 63 Subparts G and H. Therefore, this unit is exempt from CAM requirements per 40 CFR 64.2(b)(1)(i).

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ID No:	Description	Requirement	Notes
1110-1B.1 1110-1B.2 1110-2.1	Inhibitor Make-up Tank Inhibitor Feed Tank JVC Effluent Tank	40 CFR 63.119 (Subpart G) – (HON) National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) for Process Vents, Storage Vessels, Transfer Operations, and Wastewater – Storage Vessel Provisions	**DOES NOT APPLY.** Tanks do not meet the definition of a storage vessel as defined in 40 CFR 63.101; tank capacities are less than 38 cubic meters (10,070 gallons). [40 CFR 63.119(a)]
1110-2.2 1110-2.3 1110-2.4 1110-2.5 1110-2.6	Pentane Column Heads Column Topper Column Refiner Column Recovery Column	40 CFR 60 Subpart NNN Standards of Performance for Volatile Organic Compound (VOC) Emissions From SOCMI Distillation Operations	**DOES NOT APPLY.** These distillation units have not been modified or reconstructed since December 30, 1983. [40 CFR 60.660(b)]
		40 CFR 63.113 (Subpart G) - HON From SOCMI Process Vents, Storage Vessels, Transfer Operations, and Wastewater – Process Vent Provisions	Maintain TRE index value > 4.0. [40 CFR 63.113(e)]
1110-3H	Isom Distillation Column	40 CFR 60 Subpart NNN Standards of Performance for VOC Emissions from SOCMI Distillation Operations	**DOES NOT APPLY.** This distillation unit has not been modified or reconstructed since December 30, 1983. [40 CFR 60.660(b)]
1110-3I	Isom Reactors	40 CFR 60 Subpart RRR Standards of Performance for VOC Emissions from SOCMI Reactor Processes	**DOES NOT APPLY.** The reactors serviced by this control system have not been modified or reconstructed since June 29, 1990. [40 CFR 60.700(b)]

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ID No:	Description	Requirement	Notes
1110-22	ACR Fugitive Emissions	LAC 33:III.2121 Control of Emissions of Organic Compounds: Fugitive Emission Control	**DOES NOT APPLY.** The ACR Unit is not an affected facility since it is not a petroleum refinery, a natural gas processing plant, a synthetic organic chemical manufacturing industry (SOCMI) unit, a methyl tertiary butyl ether (MTBE) manufacturing unit, or a polymer manufacturing unit. [LAC 33:III.2121.A] The ACR Unit is subject to the provision of 40 CFR 63 Subpart FFFF (MON).
		40 CFR 63 Subpart FFFF National Emission Standards for Hazardous Air Pollutants (NESHAP): Miscellaneous Organic Chemical Manufacturing (MON)	**DOES NOT APPLY.** The ACR Unit does not have equipment *in organic HAP service* as defined in 40 CFR 63.2550. [40 CFR 63.2480(a), Table 6].
7000-10A	Monomer Flare	40 CFR 63.113 (Subpart G) - HON From SOCMI Process Vents, Storage Vessels, Transfer Operations, and Wastewater – Process Vent Provisions	The flare shall comply with the requirements of 40 CFR 63.11(b). Halogenated vent streams shall not be vented to a flare. [40 CFR 63.113(a)(1)]
3-91	Chloroprene Unit – Fugitive Emissions	LAC 33:III.2121 Control of Emission of Organic Compounds – Fugitive Emission Control	Comply with all applicable requirements of LAC 33:III.2121.
		40 CFR 63 Subpart H HON for Equipment Leaks	Comply with all applicable requirements of 40 CFR 63 Subpart H.

VII. STREAMLINED REQUIREMENTS

Unit or Plant Site	Programs Being Streamlined	Stream Applicability	Overall Most Stringent Program
N/A			

VIII. Glossary

Best Available Control Technologies (BACT) - An emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under this part which would be emitted from any proposed major stationary source or major modification which the administrative authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant.

CAM - Compliance Assurance Monitoring rule – A federal air regulation under 40 CFR Part 64

Carbon Monoxide (CO) – A colorless, odorless gas, which is an oxide of carbon.

Grandfathered Status - Those facilities that were under actual construction or operation as of June 19, 1969, the signature date of the original Clean Air Act. These facilities are not required to obtain a permit. Facilities that are subject to Part 70 (Title V) requirements lose grandfathered status and must apply for a permit.

Hydrogen Disulfide (H_2S) - A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the action of acids on metallic sulfides, and is an important chemical reagent.

Maximum Achievable Control Technology (MACT) - The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

NESHAP - National Emission Standards for Hazardous Air Pollutants – Toxic air emission standards for specific types of facilities, as outlined in 40 CFR Parts 61 through 63

Nitrogen Oxides (NO_x) - Compounds whose molecules consists of nitrogen and oxygen.

Nonattainment New Source Review (NNSR) - A New Source Review permitting program for major sources in geographic areas that do not meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. Nonattainment NSR is designed to ensure that emissions associated with new or modified sources will be regulated with the goal of improving ambient air quality.

NSPS - New Source Performance Standards – Air emission standards for specific types of facilities, as outlined in 40 CFR Part 60

Organic Compound - Any compound of carbon and another element. Examples: Methane (CH_4), Ethane (C_2H_6), Carbon Disulfide (CS_2)

Part 70 Operating Permit- Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: $\geq$ 10 tons per year of any toxic air pollutant; $\geq$ 25 tons of total toxic air pollutants; and $\geq$ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM_{10}- Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) - The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO_2) – An oxide of sulphur.

TAP - Toxic Air Pollutant (LDEQ acronym for air pollutants regulated under LAC 33 Part III, Chapter 51, Tables 1 through 3

Title V permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) - Any organic compound which participates in atmospheric photochemical reactions; that is, any organic compound other than those which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.